what sort of cancer a PSA test screened for scored lower than those who did ($p<.05$). Overall, 35% of men had read or been given conflicting information about PSA testing; these men were more likely to report mixed feelings about PSA testing, would be less likely to find a normal result reassuring, and were less likely to believe that PSA testing reduces chances of dying from prostate cancer ($p<.05$). **Conclusions:** Many men in this study were unfamiliar with PSA testing. Most believed that PSA testing would reduce their chances of dying from prostate cancer, and were not aware of conflicting information about PSA testing. Patient education about PSA testing is needed.

Keywords: Prostate cancer screening, Health beliefs, Health literacy
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C-B2-05:

Screening Colonoscopy: Benefits, Barriers and Conflicting Information

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Background: Research suggests physician-patient discussions about colonoscopies may be brief or absent. We sought to investigate men and women's familiarity and experiences with colonoscopies, and perceived benefits and barriers. **Methods:** In the context of the multi-site CRN study "Health Literacy and Cancer Prevention" adults aged 40 to 70 were interviewed about knowledge, attitudes and experiences related to colonoscopy screening. **Results:** Of 1068 adults queried, 99% had heard of a colonoscopy, and 90% knew what type of cancer it tested for. 976 men and women had or intended to have a colonoscopy (accepters). The most common reasons cited for a colonoscopy were age appropriateness (59%), physician advice (56%), family history (16%), and colon-related symptoms (14%). 69 men and women had not had and did not intend to be tested (decliners). These participants cited lack of doctor recommendation (39%), age (16%), absence of family history (15%) and absence of colon-related issues (15%) as reasons. Most participants (92%) would find a normal result reassuring, and most (80%) believed having a colonoscopy would reduce their chances of dying from colon cancer. Overall, 41% would be nervous about what a colonoscopy might find and 69% agreed that having a colonoscopy is unpleasant. A statistically significant difference between accepters and decliners was found only on the latter belief, with 68% of decliners endorsing that a colonoscopy is unpleasant, compared to 82% of accepters ($p<.05$). There were no statistically significant differences between accepters and decliners on health literacy test scores, however those who did not know what sort of cancer a colonoscopy screened for scored lower than those who did ($p<.05$). Overall, 14% of participants had read or been given conflicting information about a colonoscopy; those who had were more likely to report mixed feelings about having a colonoscopy ($p<.05$). **Conclusions:** Almost all participants in this study were familiar with colonoscopy screening, and a large majority knew what type of cancer it screened for. While many participants were aware of age as a factor in screening appropriateness, not surprisingly physicians' advice (or its absence) also appeared to be influential.

Keywords: Colon cancer screening, Health beliefs, Health literacy
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C-B2-01:

Cardiotoxic Chemotherapy is Associated with Increased Heart Failure Risk Among Women with Breast Cancer in the Cancer Research Network

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Background: The association between cardiotoxic chemotherapy for breast cancer treatment and congestive heart failure has been well documented in clinical trials. However, clinical trial populations often contain young, otherwise healthy people, and these results may not represent true associations in community settings. We used electronic administrative data from the CRN VDW to estimate the association between chemotherapy with anthracycline and/or trastuzumab and heart failure in a cohort of women with breast cancer. **Methods:** We included 13,497 women diagnosed with invasive breast cancer between 1999-2007 from eight CRN health plans. Using Current Procedural Terminology codes and National Drug Codes from the VDW, we determined whether each woman was exposed to anthracyclines alone, trastuzumab alone, anthracyclines plus trastuzumab, other chemotherapy, or no chemotherapy. We used International Classification of Disease codes and an algorithm based on number of inpatient, outpatient, and emergency department diagnoses to determine whether each woman had a prevalent (before breast cancer diagnosis) or incident (after breast cancer diagnosis) heart failure diagnosis. Using Cox proportional hazards models, we modeled the time to incident heart failure (censoring at disenrollment or death) associated with time varying exposures for each treatment category using hazard ratios (HR) and 95% confidence intervals (CI) adjusted for age, health plan, stage, year of diagnosis, and comorbidities. **Results:** Almost half of our study population received no chemotherapy (46.2%, 6420/13497); 28.6% (3857/13497) received anthracyclines alone, 1.2% (157/13497) received trastuzumab alone, 3.5% (470/13497) received both, and 20.4% (2748/13497) received other chemotherapy. One thousand forty-one women (7.7%, 1041/13497) were diagnosed with incident heart failure. The adjusted HR associated with anthracycline use alone was 1.19 (95%CI=0.97-1.46) compared with no chemotherapy, 3.02 for trastuzumab alone (95%CI=1.86-4.89), 6.05 for anthracycline and trastuzumab combined (95%CI=4.35-8.42), and 1.36 for other chemotherapy (95%CI=1.17-1.58). These associations strengthened after excluding women with prevalent heart failure or incident heart failure diagnosed <60 days after breast cancer diagnosis. **Conclusions:** Cardiotoxic outcomes after chemotherapy occur in the community setting; the combination of anthracycline plus trastuzumab in particular, is associated with an elevated heart failure risk. The CRN is an ideal setting to study chemotherapy, cardiotoxicity, and other survivorship-related outcomes.

Keywords: Breast cancer, Chemotherapy, Congestive heart failure
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C-B2-03:

10-Year Safety of Radiotherapy Among Older Breast Cancer Survivors

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Background: Almost 75% of breast cancer patients worldwide are treated with adjuvant therapy, primarily radiotherapy (RT). However, little is known about the long-term effects on cardiovascular health, particularly in older women. **Aims:** We studied nearly 800 women aged 65 years or older with early-stage breast cancer who received care through integrated health care plans to determine if cardiovascular disease (CVD) is associated with radiotherapy. **Methods: Design & Data Elements:** The retrospective cohort study, Breast Cancer Treatment in Older Women (BOW), included 806 women aged 65+ years diagnosed with stage I-II breast cancer between 1990 & 1994. These women were treated with surgery (breast conserving surgery [BCS] or mastectomy) and followed through 12/31/2004. **Exclusions:** Participants with CVD disease at baseline; those who had chemotherapy; or underwent BCS only without radiation treatment (i.e., less than standard care). **Data elements:** Demographic, treatment, tumor and comorbidity data from medical records, automated membership databases & SEER-affiliated

cancer registries. *CVD outcomes:* acute myocardial infarction, angina pectoris, pericarditis, valvular dysfunction, cardiomyopathy, dysrhythmia, congestive heart failure and stroke. *Exposure:* Completed radiation treatment (RT) *Statistical analysis:* Adjusted hazard ratios (HR) and 95% confidence intervals were estimated using Cox models with time dependent tamoxifen & radiotherapy use status. Covariates included age, year of diagnosis, race/ethnicity, stage, ER/PR status, laterality, comorbidities & health plan. **Results:** When comparing women who received RT with those who did not (full cohort, n=806), radiotherapy was not associated with greater risk of CVD after adjusting for multiple covariates including laterality (Table 2). However, within the subset exposed to RT (n=340), women treated for cancer of the left breast had a significant increase in CVD risk (HR=1.54, 1.07-2.23) compared with women treated with RT for the right breast. **Conclusions:** Preliminary results demonstrate that RT to the left breast may be associated with greater CVD risk. Our next study, "Long-Term Survivorship in Older Women with Early Stage Breast Cancer"(BOWII), will follow these women for an additional 5 years. This study will collect a wider set of risk factors for CVD to further evaluate these findings (2RO1CA093772-05A2 R. Silliman). **Keywords:** Cancer, Cardiovascular disease, Radiotherapy
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C-A5-03:

Rapid Estimates of the Costs of Diagnosing Lung Cancers

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Background/Aims: The HMO Cancer Research Network received a request from the National Cancer Institute to provide an empirical estimate of the medical care costs of diagnosing lung cancers within a typical HMO setting. This estimate had to be completed within 24 hours. This paper summarizes the methods and data we used to generate our response to this request. We assumed that services delivered during the 90 days prior to the date of the lung cancer diagnosis would provide an acceptable order-of-magnitude estimate of the costs of a diagnosis work-up. We further assumed that additional imaging procedures performed after the date of diagnosis represented treatment costs because their primary purpose was to assist physicians in developing treatment plans. **Methods:** This analysis was conducted in four large group-model HMOs: Group Health Cooperative, Kaiser Permanente Colorado, Kaiser Permanente Northern California, and Kaiser Permanente Northwest. To be included in the estimates, patients with lung cancer had to be enrolled in one of the four participating health plans for at least 30 days between January 1, 2000 and December 31, 2008. Patients also had to have their lung cancers diagnosed at least 90 days after their effective date of enrollment. Furthermore, patients diagnosed at autopsy were excluded. The following elements of medical care utilization were included: hospitalizations, inpatient days, surgical procedures, doctor office visits, imaging procedures, laboratory tests, and medication dispensings. Outpatient procedures were weighted by Medicare's Resource-based Relative Value System (RBRVS). We used Medicare's RBRVS-to-dollars conversion coefficient for 2008 to compute total ambulatory care expenses. Inpatient expenses were computed by a DRG-weighted per diem cost (which preserved variations in lengths of stay). We also identified specific surgical, imaging, and laboratory procedures that were most consistent with a diagnostic work-up for a pulmonary disease in general and lung cancer in particular. **Results:** We were able to develop and run VDW programs to identify the study population in the four health plans; extract and summarize each utilization element; attach monetary weights to each service; and compute total costs of care for the diagnosis phase. **Conclusions:** Rapid costing is feasible for the CRN.

Keywords: Cancer, Costs, Diagnosis

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C-C1-03:

A GPS for Navigating Sensitive Research Topics: The Case of Adverse Events in Oncology

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Background: Adverse events and medical errors are challenging aspects of clinical care delivery, and also present challenges as topics for research. Nonetheless, understanding how and why such errors occur is critical to rendering improvements. Using examples from a multi-site study of problems in cancer care, we identify potential pitfalls and strategies to consider when researching sensitive or thorny topics in our delivery systems. **Methods:** In the context of the CRN Cancer Communication Research Center our team is studying adverse events and medical errors in cancer care (both in primary and specialty care settings), and how communication could be used to prevent problems and/or respond to patients when something goes wrong in their care. Throughout the course of developing the study, the three sites encountered challenging dilemmas pertaining to risk management, quality improvement, stakeholder "buy-in" to the study idea, and IRB review. **Results:** Case studies within the larger context of a study on communication in cancer care will be presented to illustrate our approaches to addressing the challenges in each area. We will review how, in some instances, the anticipated challenges did not manifest themselves, and what has been required on the part of the study team to ensure ongoing buy-in, even as findings from the actual research study illuminate deficits in care. **Conclusions:** Sensitive research topics, especially those which may reveal opportunities for improving medical care, or confronting a persistent problem in quality of care, require particular attention to partnerships with key leaders, frequent communication, and an openness to modifying the research to meet the needs of both the study team and the clinical setting.

Keywords: Communication, Cancer, Quality of care

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C-C1-04:

Use of Health Plan EMR Data to Identify Chemotherapy Regimens for Advanced Lung Cancer

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Background: Several studies have demonstrated that chemotherapy prolongs survival by upwards of 3 months in patients with advanced (stage IIIB-IV) non-small cell lung cancer (NSCLC), but often at considerable costs. Analyses of SEER-Medicare data suggests that only 25% of older patients receive chemotherapy, however, little is known about how these treatment rates compare to younger patients and to those receiving care in an HMO. **Aims:** Using the HMO Cancer Research Network's (CRN) Virtual Data Warehouse (VDW) at 4 CRN sites, we examine the characteristics of stage IIIB-IV NSCLC patients who receive chemotherapy, and we assess the first-line chemotherapy patterns overtime. **Methods:** Patients aged ≥21 years with stage IIIB and IV NSCLC diagnosed between 2000-2007 at 4 CRN sites were included in the analysis. Patients were followed from diagnosis date through the end of 2008 (or death or disenrollment). Patient characteristics, clinical information, chemotherapy treatment data, and mortality were obtained from the CRN Virtual Data Warehouse. Current Procedural Terminology codes and National Drug Codes from the VDW were used to identify chemotherapy regimens. Descriptive statistics were performed to describe the study samples, both overall, overtime, and by subgroups (age category, stage, etc). Differences in the proportion of patients receiving various chemotherapy regimens, (by health plan, age category, stage, etc) were tested using